

# Kirk D Knobelspiesse

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## EDUCATION

**Columbia University**, New York, New York. Doctor of Philosophy, Applied Mathematics, 2011. Research at the NASA Goddard Institute for Space Studies. Thesis title: Atmospheric Aerosol Optical Property Retrieval with Scanning Polarimeters. Advisors: Drs. Brian Cairns, Barbara Carlson, and Adam Sobel.

**Columbia University**, New York, New York. Master's of Philosophy, Applied Mathematics, 2007.

**Rochester Institute of Technology**, Rochester, New York. Master's of Science, Imaging Science, 2000. Concentration: Remote Sensing. Thesis title: Atmospheric Compensation for SeaWiFS images of Lake Superior Utilizing Spatial Information. Advisor: Dr. Anthony Vodacek.

**Rochester Institute of Technology**, Rochester, New York. Bachelor's Degree of Science, Imaging and Photographic Technology 1998. Graduated with Honors.

## EXPERIENCE

**NASA Postdoctoral Program Fellow, Goddard Institute for Space Studies, New York, NY.** Advisor: Dr. Michael Mishchenko. January 2011 to present.

**NASA Goddard Institute for Space Studies / Columbia University**, New York, NY. Graduate research assistant to Dr. Brian Cairns, funded by the NASA Glory Mission. June 2006 to December, 2010.

**NASA Goddard Space Flight Center**, Science Systems and Applications, Inc., Greenbelt, MD Calibration / Validation Analyst. October 2000 to July 2004. Part of two projects: **Sea-Viewing Wide Field-of-View Sensor (SeaWiFS) Project:** Performed daily quality control checks on imagery from the SeaWiFS multispectral remote sensing satellite. Participated in SeaWiFS calibration and validation activities.

**Sensor Intercomparison and Merger for Biological and Interdisciplinary Oceanic Studies (SIMBIOS) Project:** Participated in efforts to compare ocean color remote sensing data using *in situ* (ground) measurements of geophysical properties at the time of satellite overpass. Helped calibrate and deploy a variety of Sun Photometers, which measure Aerosol Optical Thickness (AOT). Wrote algorithms and software to calibrate, process, screen and analyze data from Sun Photometers in preparation for database archival. Participated in oceanographic research cruises.

**Secured Document Systems, Inc.**, Rochester, NY. Head of Research (for a very small company). Duties included the development of patterns that alias when reproduced on digital copiers and in order to prevent counterfeiting. May 1998 to July 1999.

**Calspan / University at Buffalo Research Center (CUBRC)**, Buffalo, NY. Computer Programmer. Duties included creating a full application with Visual Basic to assist the training of members of the U.S. Olympic Ski Team. May 1997 to August 1997.

**University of Rochester**, Laboratory for Laser Energetics, Omega Operations Group, Rochester, NY. Photographic Technician. Duties included experimental film processing and

scientific image processing with PV-Wave and C++ to support a laser fusion research facility.  
October 1996 to May 1997.

**NASA Lewis Research Center**, Imaging Technology Center, Scientific Imaging Group, Cortez III Service Corp., Cleveland, OH. Assistant Imaging Specialist, duties included high speed imaging research support, 16mm film editing, web development. May 1996 to August 1996.

## SKILLS

**Field Experience:** Participated in the following scientific field experiments:

Arctic Research of the Composition of the Troposphere from Aircraft and Satellites (**ARCTAS**), which was part of the international Polar Study using Aircraft, Remote Sensing, Surface Measurements and Models of Climate, Chemistry, Aerosols and Transport (**POLARCAT**) campaign. June – July, 2008, Yellowknife, Canada. Participated in the deployment of the Research Scanning Polarimeter on repeated flights of a NASA King Air B-200 aircraft.

Intercontinental Chemical Transport Experiment-North America Phase B (**INTEX-B**) which was coordinated with the multi-agency Megacity Initiative: Local and Global Research Observations (**MILAGRO**) Experiment. April – March, 2006, Veracruz, Mexico. Participated in the deployment of the Research Scanning Polarimeter on repeated flights of a Jetstream-31 aircraft.

Aerosol Lidar Validation Experiment (**ALIVE**). September, 2005, Ponca City, Oklahoma. Participated in the deployment of the Research Scanning Polarimeter on repeated flights of a Jetstream-31 aircraft.

**NORBAL-3** cruise, Gulf of Lyon, Mediterranean Sea, October, 2002. Deployed a Micropulse LIDAR, Fast-Rotating Shadowband Radiometer (FRSR) and hand held sun photometer (SIMBAD-A) on the Naples, Italy, based R/V Urania.

**CALCOFI-0107** cruise, Eastern Pacific Ocean, July, 2001. Deployed a variety of hand held sun photometers (Microtops, SIMBAD-A) and assisted with general ship research duties on the San Diego, CA, based R/V New Horizon.

**Programming Language experience:** IDL (10+ years), some MATLAB, FORTRAN, and PERL

## HONORS

**Integrative Graduate Education and Research Traineeship (IGERT), National Science Foundation.** Joint Program in Applied Mathematics and Earth & Environmental Science, Columbia University: Graduate fellow, 2004 to 2009.

**NASA Group Achievement awards.** ARCTAS field campaign (2009), INTEX-B field campaign (2008), SIMBIOS Project (2003).

## PUBLICATIONS

please see <http://pubs.giss.nasa.gov/authors/kknobelspiess.html>

## AFFILIATIONS

**American Geophysical Union (AGU)**

**American Meteorological Society (AMS)**

**European Geophysical Union (EGU)**

**Institute of Electrical and Electronics Engineers (IEEE)**